

## CLAIMS

1. A cone crusher (20) which comprises:

a bowl (4) having a concave liner (3);

a head (2) having a mantle (1) and which is capable of carrying out gyratory  
5 movement within the bowl (4) so that the concave liner (3) and the mantle (1) define a  
generally annular crushing space and cooperate to exert a crushing action on crushable  
material in such space; and

a drive train coupled with the head (2) and operative to apply gyratory movement  
thereto;

10 in which the drive train comprises:

an upright drive shaft (15);

an eccentric (9) mounted on, and arranged to be driven by the drive shaft (15),  
said head (2) being mounted on the eccentric (9) in such a way that the head is driven to  
carry out gyratory movement within the bowl (4); and

15 a drive motor (14) coupled with a lower end of the drive shaft (15), said motor  
having a small lateral extent, measured radially outwardly of the axis of the drive shaft  
(15), so as to present minimum obstacle to direct downward gravity discharge of crushed  
material from the crushing space defined between the concave liner (3) and the mantle (1).

2. A cone crusher according to Claim 1, in which the upright drive shaft (15) is

20 mounted for rotation internally of a main shaft (8) securely located in the frame (6) of the  
crusher and on which the rotating head assembly (2, 9) is centred.

3. A cone crusher according to Claim 1 or 2, in which the motor (14) has a lateral  
extent which is less than the radial extent of the eccentric (9), whereby a clear,  
unobstructed downward annular path of substantial cross-sectional area is defined for  
25 gravity discharge of crushed material.

4. A cone crusher according to Claim 1 or 2, in which the motor (14) has a lateral  
extent which is less than the radial extent of the head (2).

5. A cone crusher according to any one of Claims 1 to 4, in which the motor (14) is a hydraulic motor or an electric motor.

6. A cone crusher according to any one of the preceding claims, in which the eccentric (9) is rotatable about the axis of the main shaft (15), supported by thrust bearing (10) and radial bearing (11), and the head (2) is capable of revolving about a second offset axis, by being carried on the outer bearing faces of the eccentric (9) and supported by a thrust bearing (12) and radial bearing (13).

7. A cone crusher according to any one of the preceding claims, in which the crushing gap between the concave liner (3) and the mantle (1) is adjustable, by upward/downward adjustment of the bowl (4) relative to the frame (6).

8. A cone crusher according to Claim 7, in which the bowl (4) is externally threaded, and is mounted on the frame (6) via an internally threaded adjustment ring (5), whereby relative rotation therebetween provides height adjustment of the bowl (4).

9. A cone crusher according to any one of the preceding claims, in which the drive motor (14) is coupled directly with the lower end of the drive shaft (15).

10. A cone crusher according to any one of the preceding claims, and forming part of a mobile crusher plant.